OVERVIEW OF PANGANI BASIN

During Spate Irrigation Leadership Course

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Presentation Outline

- Background
- Characteristics
- Roles and Responsibilities of Pangani Basin
- Water Resources Management Challenges
- Opportunities/ Initiatives going on
- The Way Forward
Characteristics/Features

- **Area**: 56,300 Km² (5% in Kenya)
- **Administratively** found in: Arusha, Kilimanjaro, Manyara and Tanga Regions (20 DCs)
- **Transboundary Basin** (Lake Chala – Jipe & Umba River, shared with Kenya)
- **Population**: About 4 Millions (census 2012)
- **Rainfall**: Bimodal basin - long rains (March-June) & short rains (Oct –Dec)
Roles of Pangani Basin

The Basin is led by Basin Water Board (10 members)

• Roles and Responsibilities accord. Sect 23 of Water Act No. 11 of 2009 include:
  – Water Resources monitoring and assessment
  – Water Allocation (issuing and managing of water permits)
  – Strengthen community participation in WRM
  – Coordinate water resources management and development planning
  – Water quality monitoring and pollution control
  – Water use conflict management
  – Water sources protection and conservation
Water Resources Utilization

• Major uses:
  ✓ Domestic (2 cities – Arusha and Tanga; Moshi municipality & rural areas)
  ✓ Environment
  ✓ Irrigation
  ✓ 3 Hydropower Plants (97MW)
  ✓ Industrial /Mining
  ✓ Fisheries
  ✓ Tourism
  ✓ Pastoralism and
  ✓ Navigation & recreation
Water Resources Management Challenges

A Water Stressed Basin (water availability is $1,200 < 1,700 \text{ m}^3/c/yr$ according to NAWAPO of 2002)

- Increasing pressure on the resource due to growing population hence, increased water use conflicts
- Change of types of crops (paddy for sisal, coffee for flowers, etc,
- Climate change
- Environmental/Land degradation
- Uncoordinated developments (absence of IWRMD Plan)
• Irrigation takes almost 80% of usable water in the Basin but efficiency is 15-20% as most of canals/furrows are not lined.
Water Resources Management Challenges (cont.)

• Human activities along and within the water sources
• Inadequate education and awareness in water sources protection
• Inadequate financial capacity of the basin in protection of water sources
Groundwater Management Challenges

- Potential not assessed
- Uncontrolled groundwater explorations and development
- Fragmented data and information
- Some aquifers are transboundary
- Inadequate enforcement
- Inadequate capacity to management

Artesian well at Kahe
Groundwater Management Challenges (cont.)

- Groundwater if well assessed and developed can supplement rain fed agriculture.

- Also with groundwater communities can grow high value crops that can be sold and get cash for buying food stuff.
Opportunities/ Initiatives Going On

**Instruments/Tools:**

- Water Resources Management Act (2009)

**Programs/ Projects:**

- Water Sector Development Program (WSDP)
- Early Warning System Project-facilitated under PMO-DMD/UNDP
Construction and installation of automatic weather station

Capacity building of basin staff on data downloading
Facilitation Establishment and Strengthening of Water User Associations (WUAs) & Catchment Water Committees (CWCs)

- Four (4) Catchment Water Committees (CWCs) in Pangani Basin
Facilitation Establishment and Strengthening of WUAs & CWCs

- 12 Water User Associations (WUAs) were established:
  1. Upper Kikuletwa
  2. Lower Kikuletwa
  3. Sanya-Kware
  4. Kikafu-Karanga-Weruweru
  5. Main Pangani Stem to Buiko
  6. Zigi-Mkulumuzi
  7. Yongoma
  8. Hingilili
  9. Umba
  10. Mbaramo
  11. Mdando and
  12. Miwaleni

- 2 Catchment Water Committees (CWCs) were established:
  1. Kikuletwa-Ruvu and
  2. Zigi-Umba

Stakeholders participation
Promoting Groundwater use

1. Improve socio-economic development of people by using water from boreholes for irrigation

2. Promote conjunctive use of groundwater and surface water
Priority WRM Infrastructure and Investment: Example to promote groundwater use in the Basin

Drilling, Construction and supply of submersible pumps & its accessories and power supply from TANESCO

Submersible pumps & its accessories

Production BH and raiser tower tank
Way Forward

• IWRMD Plan prepared and implemented.
• Strengthening and maintaining monitoring network stations *(hydromet, water quality and groundwater)*
• Facilitation establishment and strengthening of WUAs
• Facilitation establishment of Catchment Water Committees
• Empowerment of communities to protect and conserve water resources
• Encouraging community to apply (new) and reviewing (existing) water use permits
• Encouraging Industries to apply effluent discharge permit
• Climate change assessment and adaptation
• Training basin staff and recruiting new staff for better water resources management
Thank you for your attention!!!

Asanteni!!!